

Exhibit A

IPR2021-00921
Patent 8,878,949

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.

Petitioner,

v.

GESTURE TECHNOLOGY PARTNERS, LLC

Patent Owner

***Inter Partes* Review No. IPR2021-00921**

Patent No. 8,878,949

**PATENT OWNER'S RESPONSE TO THE PETITION
FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,878,949
PURSUANT TO 37 C.F.R. § 42.120**

Filed on behalf of Patent Owner by:

Todd E. Landis (Reg. No. 44,200)
2633 McKinney Ave., Suite 130
Dallas, TX 75204

John Wittenzellner (Reg. No. 61,662)
1735 Market Street, Suite A #453
Philadelphia, PA 19103

Adam B. Livingston (Reg. No. 79,173)
327 Congress Avenue, Suite 490
Austin, TX 78701

WILLIAMS SIMONS & LANDIS PLLC

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I. INTRODUCTION

Gesture Technology Partners, LLC (“GTP” or “Patent Owner”) respectfully submits this Preliminary Response (the “Response”) to Apple Inc.’s (“Apple” or “Petitioner”) Petition for *Inter Partes* Review (“IPR”) No. IPR2021-00921 (the “Petition” or “Pet.”) of U.S. Patent No. 8,878,949 (the “’949 Patent”).

Institution should be denied because the Petition fails to demonstrate a reasonable likelihood that any challenged claim of the ’949 Patent is unpatentable. As detailed herein, the references applied by the Petition against all independent claims of the ’949 Patent have numerous glaring deficiencies, including failing to teach to suggest at least the following limitations:

- [1(a)]¹ a device housing including a forward facing portion, the forward facing portion of the device housing encompassing an electro-optical sensor having a field of view and including a digital camera separate from the electro-optical sensor;
- [1(b)] a processing unit within the device housing and operatively coupled to an output of the electro-optical sensor, wherein the processing unit is

¹ For convenience of reference only, this Preliminary Response adopts the claim element numbering presented in the Petition.

- adapted to: determine a gesture has been performed in the electro-optical sensor field of view based on the electro-optical sensor output;
- [1(c)] control the digital camera in response to the gesture performed in the electro-optical sensor field of view, wherein the gesture corresponds to an image capture command, and wherein the image capture command causes the digital camera to store an image to memory;
 - [8(a)] providing a portable device including a forward facing portion encompassing a digital camera and an electro-optical sensor, the electro-optical sensor having an output and defining a field of view;
 - [8(b)] determining, using a processing unit, a gesture has been performed in the electro-optical sensor field of view based on the electro-optical sensor output, wherein the determined gesture corresponds to an image capture command;
 - [8(c)] capturing an image to the digital camera in response to the determined gesture corresponding to the image capture command;
 - [13(a)] a device housing including a forward facing portion, the forwarding facing portion encompassing a digital camera adapted to capture an image and having a field of view and encompassing a sensor adapted to detect a gesture in the digital camera field of view;

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- [13(b)] a processing unit operatively coupled to the sensor and to the digital camera, wherein the processing unit is adapted to: detect a gesture has been performed in the electro-optical sensor field of view based on an output of the electro-optical sensor; and
- [13(c)] correlate the gesture detected by the sensor with an image capture function and subsequently capture an image using the digital camera, wherein the detected gesture is identified by the processing unit apart from a plurality of gestures.

Finally, the Petition should be denied because the Board does not have jurisdiction over expired patents.

For these reasons, institution should be denied.

II. STATEMENT OF THE PRECISE RELIEF REQUESTED

Patent Owner requests that the Board deny institution of the Petition with respect to all challenged claims and all asserted grounds. A full statement of the reasons for the relief requested is set forth in Sections III-IV of this Response.

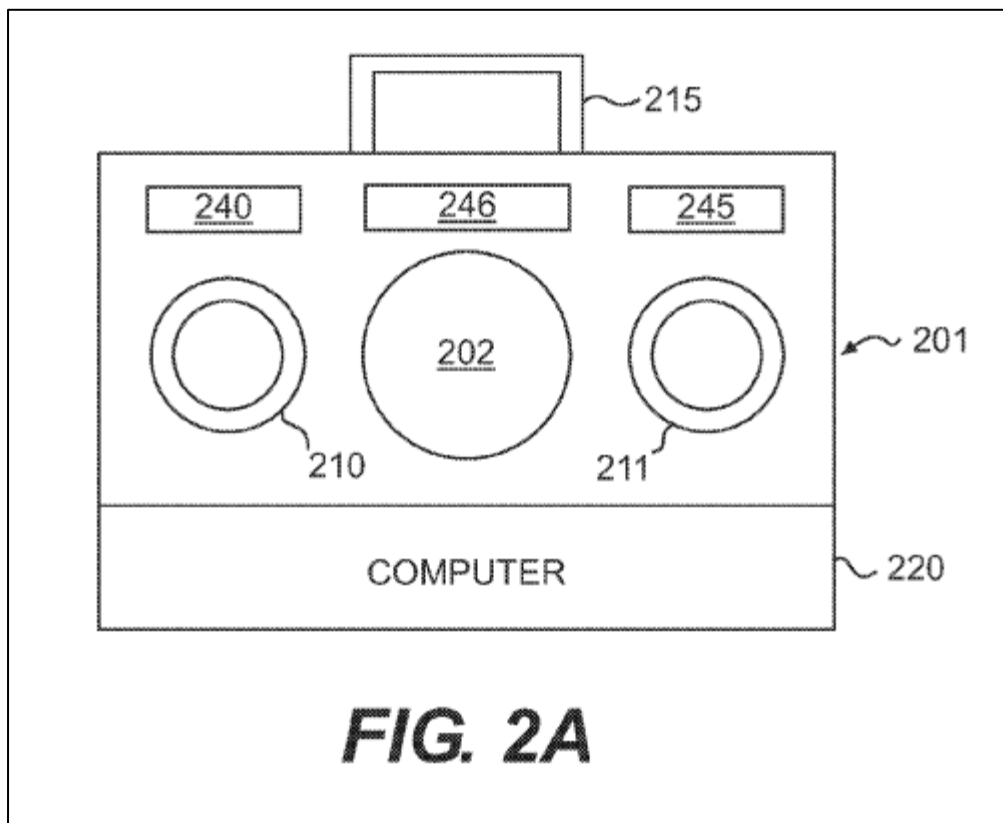
III. THE PETITION SHOULD BE DENIED BECAUSE IT DOES NOT ESTABLISH A REASONABLE LIKELIHOOD OF SUCCESS ON ANY CHALLENGED CLAIM

As shown below, the Petition fails to demonstrate a reasonable likelihood that Petitioner would prevail with respect to any claim of the '949 Patent. The Petition challenges claims 1-18 of the '949 Patent (the "Challenged Claims"). Pet., p. 1. As

detailed herein, each proposed Ground fails to disclose key limitations of each Challenged Claim. Trial should not be instituted.

A. The '949 Patent

The '949 Patent, which is entitled “Camera Based Interaction and Instruction,” claims priority to U.S. Provisional Application No. 60/133,671 filed on May 11, 1999. Ex. 1001. The '949 Patent is directed towards methods and apparatus to “enhance the quality and usefulness of picture taking for pleasure, commercial, or other business purposes.” *Id.*, Abstract. An example camera system is depicted in FIG. 2A, below.



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Ex. 1001, Fig. 2A. Camera system (201) may include a central camera (202) having “high resolution and color accuracy,” one or more other cameras (210, 211) having a “lower resolution,” and light sources such as LED arrays (240, 245). *Id.*, at 5:1-9, 5:27-29. The camera system (210) also includes a computer (220) which “processes the data from cameras 210 and 211 to get various position and/or orientation data concerning” a subject to be photographed. *Id.*, at 5:24-33, 5:45-49. One can use camera system (201) to capture an image of a subject when the “subject undertakes a particular signal comprising a position or gesture” as determined by the computer (220). *Id.*

B. Level of Ordinary Skill in the Art

For the purposes of this Response only, Patent Owner does not dispute the level of skill of a person of ordinary skill in the art (“POSITA”) identified in the Petition.

C. Claim Construction

Except as discussed below, Patent Owner does not contest the constructions proposed in the Petition for the purpose of this response. *See* Pet., pp. 7-10. Patent Owner reserves the right to address claim construction of any term in the Challenged Claims if the Board institutes *inter partes* proceedings.

D. Ground 1 – The Combination of Numazaki and Nonaka Does Not Render Obvious Claims 1-18

The combination of Numazaki and Nonaka do not render obvious claims 1-18.

1. Independent Claim 1

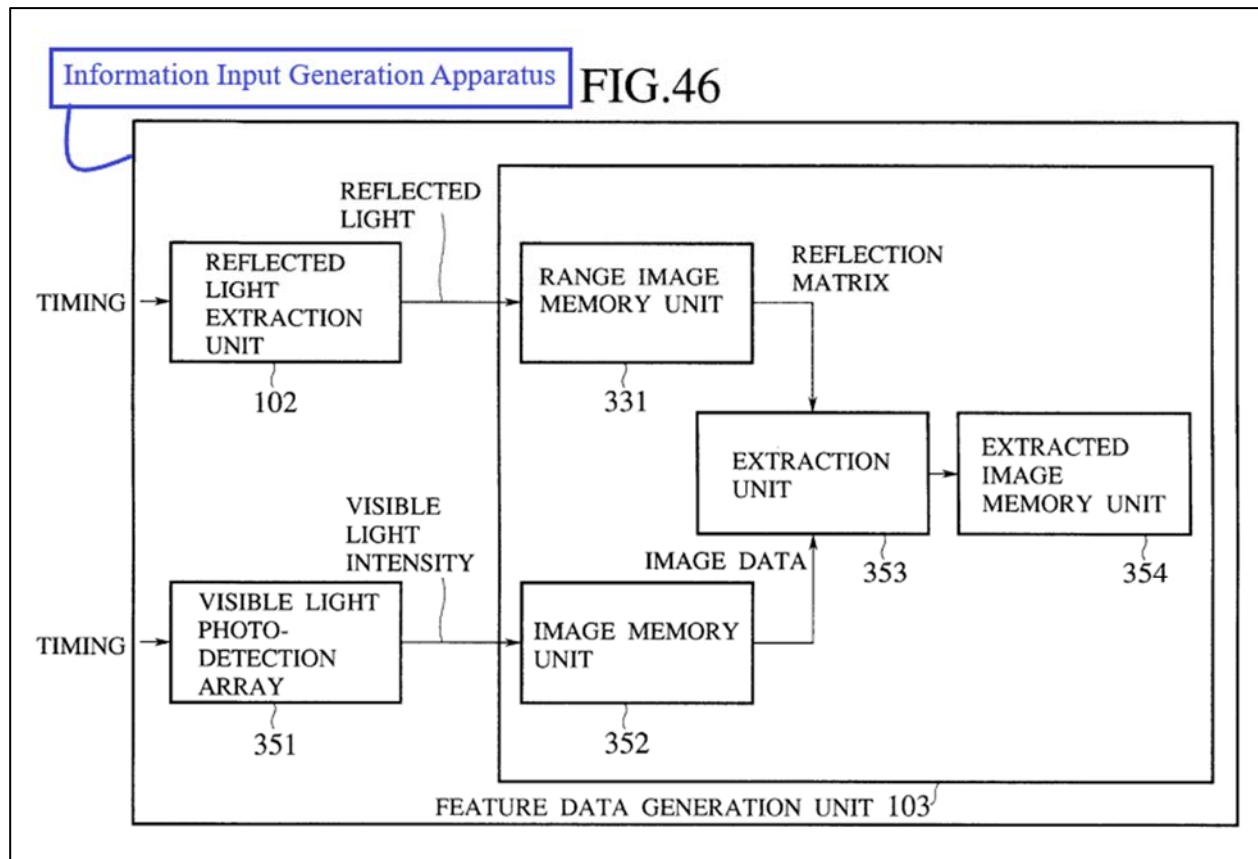
The combination of Numazaki and Nonaka does not render independent claim 1 obvious because it does not teach or suggest at least the following elements of independent claim 1:

- i. [1(a)] a device housing including a forward facing portion, the forward facing portion of the device housing encompassing an electro-optical sensor having a field of view and including a digital camera separate from the electro-optical sensor;

Claim element [1(a)] recites “a device housing including a forward facing portion, the forward facing portion of the device housing encompassing an electro-optical sensor having a field of view and including a digital camera separate from the electro-optical sensor.” The Petition contends that the laptop disclosed in the eighth embodiment of Numazaki is the claimed “device housing,” that the “reflected light extraction unit 102” is the claimed “electro-optical sensor,” and that “visible light photo-detection array 351” is the claimed “digital camera.” Pet., pp. 26-28. Both “reflected light extraction unit 102” and “visible light photo-detection array 351” are disclosed in Numazaki’s fifth embodiment, while the laptop is disclosed in Numazaki’s eighth embodiment. The Petition further contends that claim element

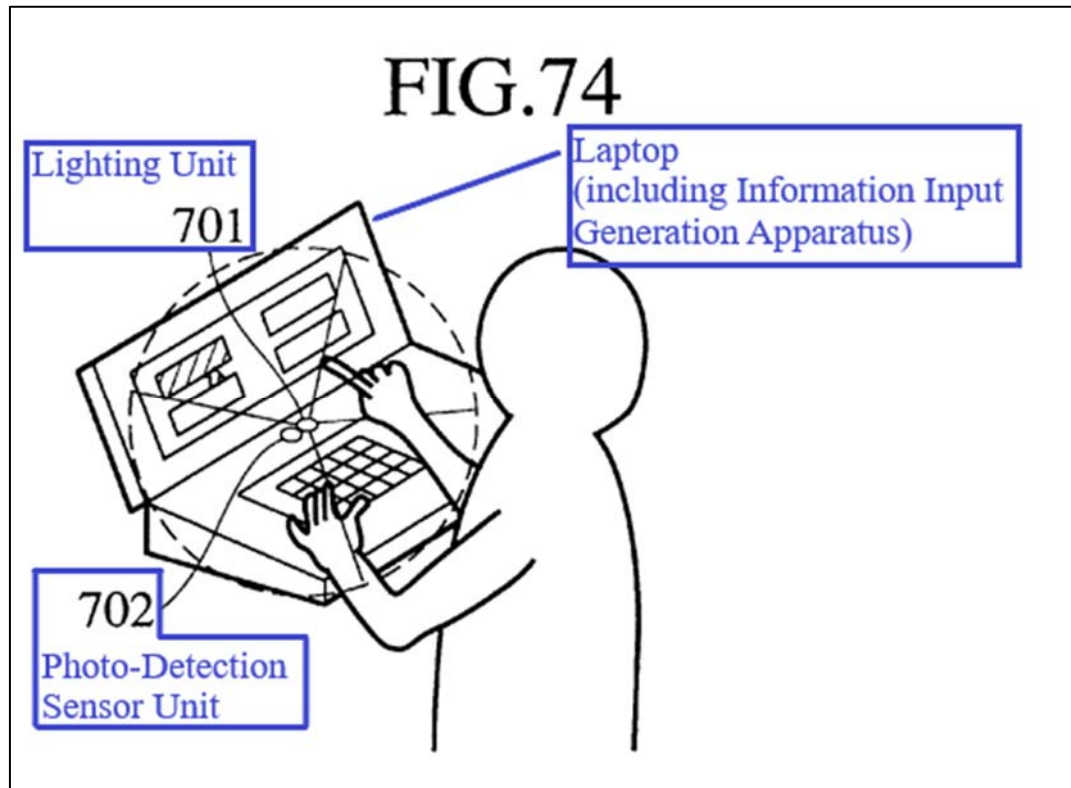
[1(a)] is met by incorporating Numazaki's fifth embodiment into Numzaki's eighth embodiment. *Id.* Patent Owner disagrees.

Numazaki's fifth embodiment discloses an information input generation apparatus as depicted in Fig. 46 below.



Ex. 1004, 7:4-6; Fig. 46 (annotated). As shown, the information input generation apparatus includes reflective light extraction unit (102) and visible light photo-detection array (351).

Numazaki's eight embodiment discloses a laptop as depicted in Fig. 74 below.



Ex. 1004, Fig. 74 (annotated). The laptop in Numazaki's eighth embodiment includes an information input generation apparatus. The lighting unit (701) and the photo-detection sensor unit (702) belong to the information input generation apparatus included in the laptop. *Id.* at 50:21-24, 29-31.

To meet claim element [1(a)], the Petition argues that the information input generation apparatus in Numazaki's laptop be the information input generation apparatus from Numazaki's fifth embodiment with reflective light extraction unit (102) and visible light photo-detection array (351) (depicted above). Pet., pp. 25-29. However, the Petition fails to establish whether, in the alleged combination of embodiments from different portions of Numazaki, the photo-detection sensor unit

(702) corresponds to reflected light extraction unit (102) or visible light photo-detection array (351). *See* Ex. 1004, 50:29-31; Pet., pp. 25-29.

Regardless of whether photo-detection sensor unit (702) corresponds to reflected light extraction unit (102) or visible light photo-detection array (351), as shown in Fig. 74, the photo-detection sensor unit (702) is located on the same upward facing portion of the laptop as the keyboard, and just “beyond the keyboard when viewed from an operator side.” Ex. 1004, 50:31-33. With this configuration, “the operator operating the keyboard can make the pointing or gesture input by slightly raising and moving the index finger” and “without hardly any shift of the hand position [relative to the keyboard].” *Id.* at 50:38-43. This upward facing portion of the laptop, by the unambiguous language of Numazaki, is not forward facing, as required by claim element [1(a)]. Even assuming, *arguendo*, that photo-detection sensor unit (702) (i.e., reflected light extraction unit (102) or visible light photo-detection array (351)) has a field of view that is forward facing, photo-detection sensor unit (702) itself is not located on a forward-facing portion of the laptop, as required by claim element [1(a)]. The Petition does not recognize this deficiency in Numazaki. *See* Pet., pp. 25-29. Nor does it argue that it would have been obvious to modify Numazaki to meet this claim element. *See id.* Accordingly, Numazaki fails to teach or suggest claim element [1(a)].

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- ii. [1(b)] a processing unit within the device housing and operatively coupled to an output of the electro-optical sensor, wherein the processing unit is adapted to: determine a gesture has been performed in the electro-optical sensor field of view based on the electro-optical sensor output,

Claim element [1(b)] recites: “a processing unit within the device housing and operatively coupled to an output of the electro-optical sensor, wherein the processing unit is adapted to: determine a gesture has been performed in the electro-optical sensor field of view based on the electro-optical sensor output.” Claim element [1(b)] requires a processing unit be capable of “determin[ing] a gesture has been performed” based on the output of one or more electro-optical sensors. *Compare* claim element [1(b)] *with* claim element [1(a)]. The Petition contends that Numazaki teaches or suggests claim element [1(b)]. Pet., pp. 29-30. It does not.

As a threshold matter, the Petition uses the term “camera units” or “sensors” to refer to what Numazaki describes as “photo-detection units.” *Compare* Pet., p. 12 (“when the first camera unit is active and off when the second camera unit is active.”) (citing Ex. 1004, 11:20-32) *with* Ex. 1004, 11:28-32 (“such that the lighting unit 101 emits the light when the first photo-detection unit 109 is in a photo-detecting state, whereas the lighting unit 101 does not emit the light when the second photo-detection unit 110 is in a photodetecting state.”); *compare* Pet., p. 26 (“‘reflected light extraction unit 102’ in the fifth embodiment is the same two-sensor structure

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as ‘reflected light extraction unit 102’ from the first embodiment”) (emphasis added) *with* Ex. 1004, 11:17-18 (“reflected light extraction unit 102 has a first photo-detection unit 109 [and] a second photo-detection unit 110”). This response will use the term “photo-detection unit” (i.e., the term used in Numazaki) to refer to what the Petition identifies as “camera unit” or “sensor” to be consistent with the disclosure of Numazaki.

Numazaki requires two images from different photo-detection units to perform an analysis of a target object and identify a gesture. Numazaki discloses a “reflected light extraction unit 102” with a “first photo-detection unit 109,” a “second photo-detection unit 110,” and a “difference calculation unit 111.” Ex. 1004, 10:57-66; 11:20-51; Fig. 2. The first photo-detection unit 109 requires that a lighting unit 101 emit light during detection. *Id.* at 11:26-30, Fig. 2. Later, at a different time, when first photo-detection unit 109 is not active, the second photo-detection unit 110 detects while lighting unit 101 is not active. *Id.*, 11:30-32, Fig. 2. Those two images—the image from first photo-detection unit 109 and the image from the second photo-detection unit 110—are then subtracted from each other before the information is used in the remainder of the system to analyze the target object and identify a gesture. *See id.*, 10:57-66; 11:43-56. Thus, Numazaki’s first, third, and fifth embodiments requires: (1) two, not one, images from different photo-detection units; (2) a lighting unit for illumination; (3) timing circuitry that

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selectively activates the lighting unit based on which photo-detection unit is active; and (4) circuitry for subtracting one image from another. Petitioner agrees that Numazaki requires two images from different photo-detection units to perform an analysis of a target object and identify a gesture. *See Pet.*, pp. 10-12, 17, 20, 29-30.

Numazaki requires two images from different photo-detection units to perform an analysis of a target object and identify a gesture, so it does not teach or suggest a processing unit capable of “determin[ing] a gesture has been performed” based on the output of one or more electro-optical sensors, as set forth in claim element [1(b)]. Similarly, Numazaki does not teach or suggest “determin[ing] a gesture has been performed” absent the other hardware that Numazaki identifies as necessary, such as the lighting unit, the image-subtraction circuitry, and the associated timing circuitry. The Petition does not recognize this deficiency in Numazaki. *See Pet.*, pp. 10-12, 17, 20, 29-30. Nor does it argue that it would have been obvious to modify Numazaki to meet this claim element. *See id.*

Moreover, as discussed above, to meet claim element [1(a)], the Petition requires that Numazaki’s fifth embodiment be implemented in Numazaki’s eighth embodiment laptop. *See claim element [1(a)], supra.* In the fifth embodiment, reflected light extraction unit 102 (i.e., claimed electro-optical sensor) generates a “reflection matrix” that acts as a “mask” to perform a “chromakey” effect with a

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digital image from visible light photo-detection array 351. Ex. 1004, 39:26-31, 50-60; Figs. 46, 48.

The Petition now requires that Numazaki's third embodiment also be implemented in Numazaki's eighth embodiment laptop. Pet., pp. 29-30. In the third embodiment, reflected light extraction unit 102 (i.e., claimed electro-optical sensor) generates a "distance matrix" that is used for gesture recognition. Ex. 1004, 29:5-18, Fig. 23. Accordingly, while both the third embodiment and the fifth embodiment employ reflected light extraction unit 102, reflected light extraction unit 102 operates differently depending on the embodiment that is being implemented. To meet claim element [1(b)], the Petition requires that reflected light extraction unit 102 be modified to generate both a "reflection matrix" and a "distance matrix." However, there is no motivation for doing so. Numazaki's third and fifth embodiments are disclosed as disparate embodiments. This is only reinforced by Petition's reliance on Nonaka to purportedly teach gestures being used to trigger image capture.

For at least these reasons, Numazaki fails to teach or suggest claim element [1(b)].

- iii. [1(c)] control the digital camera in response to the gesture performed in the electro-optical sensor field of view, wherein the gesture corresponds to an image capture

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command, and wherein the image capture command causes the digital camera to store an image to memory

Claim element [1(c)] recites “control the digital camera in response to the gesture performed in the electro-optical sensor field of view, wherein the gesture corresponds to an image capture command, and wherein the image capture command causes the digital camera to store an image to memory.” The Petition contends that the combination of Numazaki and Nonaka teaches or suggests claim element [1(c)]. Pet., pp. 20-21, 31-33. It does not.

To meet claim element [1(c)], the Petition combines Numazaki’s third embodiment, Numazaki’s fifth embodiment, and Numazaki’s eighth embodiment in accordance with the teachings of Nonaka. Pet., pp. 20-21, 31-33. Patent Owner asserts there is no motivation to do so for multiple reasons.

First, Numazaki explicitly delineates multiple embodiments including a first embodiment, a third embodiment, and a fifth embodiment. Ex. 1004, 10:21, 29:1, 39:3. Numazaki’s first embodiment discloses an information input generation apparatus including a feature data generation unit (FDGU). Ex. 1004, 10:21-27; Fig. 1. Numazaki’s third embodiment discloses one implementation of the FDGU. *Id.* at 29:4-8 (“This third embodiment is directed to another exemplary case of the [FDGU] of the first embodiment”). The third embodiment implements the FDGU with a shape memory unit and a shape interpretation unit to perform gesture

recognition. *Id.* at 29:5-8; Fig. 23. Numazaki's fifth embodiment discloses a different implementation of the FDGU. *Id.* at 39: 17-19 ("this fifth embodiment is directed to another exemplary case of the [FDGU] in the first embodiment"). The fifth embodiment implements the FDGU with an extraction unit and an extracted image memory unit to generate a mask for a chromakey effect. *Id.* at 39:19-20 and 50-60; Figs. 46, 48. In other words, Numazaki's third and fifth embodiments effectively disclose competing implementations for the FDGU. By virtue of being competing implementations of the same component (i.e., the FDGU), Numazaki teaches away from combining the third and fifth embodiments.

Second, the Petition contends that the motivations to combine Numazaki's third, fifth, and eighth embodiments are "a higher degree of freedom, good portability, and cost benefits," as taught by Nonaka. Pet., p.21; Ex. 1003, ¶ 49. Patent Owner disagrees. Nonaka teaches that "a higher degree of freedom, good portability, and cost benefits" result from not making a camera operable via a remote-control unit. Ex. 1005, p. 2 (emphasis added). In contrast, Numazaki is completely silent regarding the existence of remote-control units and the use of remote-control units to operate a camera. Accordingly, the Petition's stated motivations for combining Numazaki's embodiments correspond to solving problems (i.e., the disadvantages of a camera with a remote-control unit) that Numazaki never had in the first place.

Third, the Petition contends that the motivation for combining Numazaki's third, fifth, and eighth embodiments is to "provide a greater degree of freedom than alternative means of trigger image capture such as timers . . . ensuring the user is able to get in position and prepared before the video capture begins." Pet., pp. 21-22. However, the Petition fails to explain why gesture-based image capture initiation provides "a greater degree of freedom" than timers, especially when a timer can be set for any length of time, giving the user whatever time is needed to get into position and get prepared for the video capture. *Id.* The alleged support from the Bederson declaration is conclusory, and provides no additional insight as to why gesture-based image capture initiation is purportedly superior to timers. *See* Ex. 1003, ¶ 49.

Fourth, the Petition contends that the motivation for combining Numazaki's third, fifth, and eighth embodiments would be an anticipation of success by a POSITA. Pet., pp. 23-25. Patent Owner disagrees. Even assuming, *arguendo*, that Numazaki's disparate embodiments, when viewed in the aggregate, have all the necessary hardware, the Petition still requires that two competing embodiments (i.e., the third and fifth embodiment) be implemented. Under such circumstances, success cannot be anticipated.

Moreover, to show anticipation of success by a POSITA, the Petition further relies on Numazaki's teachings that gestures may be used to power on/off home electronic appliances. Pet., p. 24; Ex. 1004, 31:7-10, 35-44. Patent Owner asserts

that merely powering-on an appliance (e.g., camera) is drastically different than invoking one of the device's many functions (e.g., image capture). Accordingly, these teachings of Numazaki provide little guarantee of success for the major overhaul of Numazaki being proposed by the Petition.

Accordingly, the combination of Numazaki and Nonaka also fails to teach or suggest claim element [1(c)]. For at least these reasons, the combination of Numazaki and Nonaka fails to render claim 1 unpatentable.

2. Dependent Claim 2

Dependent claim 2 recites "The portable device of claim 1 wherein the determined gesture includes a hand motion." Claim 2 depends from and adds limitations to claim 1. The combination of Numazaki and Nonaka fails to render claim 1 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 2 unpatentable for at least the same reasons.

3. Dependent Claim 3

Dependent claim 3 recites "The portable device of claim 1 wherein the determined gesture includes a pose." Claim 3 depends from and adds limitations to claim 1. The combination of Numazaki and Nonaka fails to render claim 1 unpatentable, therefore, the combination of Numazaki fails to render dependent claim 3 unpatentable for at least the same reasons.

4. Dependent Claim 4

Dependent claim 4 recites “The portable device of claim 1 wherein the electro-optical sensor is fixed in relation to the digital camera.” Claim 4 depends from and adds limitations to claim 1. The combination of Numazaki and Nonaka fails to render claim 1 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 4 unpatentable for at least the same reasons.

Moreover, the Petition cites to only a single portion of Numazaki to argue that the reflected light extraction unit 102 and visible light photo-detection array 351. *See* Pet., p. 38 (citing Ex. 1004, 39:4-44). That portion of Numazaki does not contain any description of whether those two components are fixed with respect to each other. *See* Ex. 1004, 39:4-44. Nor do the figures referenced therein. *See* Ex. 1004, Figs. 46-53. For at least these reasons, the combination of Numazaki and Nonaka fails to render claim 4 unpatentable.

5. Dependent Claim 5

Dependent claim 5 recites “The portable device of claim 1 further including a forward facing light source.” Claim 5 depends from and adds limitations to claim 1. The combination of Numazaki and Nonaka fails to render claim 1 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 5 unpatentable for at least the same reasons.

6. Dependent Claim 6

Dependent claim 6 recites “The portable device of claim 1 wherein the electro-optical sensor defines a resolution less than a resolution defined by the digital camera.” Claim 6 depends from and adds limitations to claim 1. The combination of Numazaki and Nonaka fails to render claim 1 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 6 unpatentable for at least the same reasons.

7. Dependent Claim 7

Dependent claim 7 recites “The portable device of claim 1 wherein the electro-optical sensor includes at least one of a CCD detector and a CMOS detector.” Claim 7 depends from and adds limitations to claim 1. The combination of Numazaki and Nonaka fails to render claim 1 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 7 unpatentable for at least the same reasons.

8. Independent Claim 8

The combination of Numazaki and Nonaka does not render independent claim 8 obvious because it does not teach or suggest at least the following elements of independent claim 8:

- i. [8(a)] providing a portable device including a forward facing portion encompassing a digital camera and an electro-optical sensor, the electro-optical sensor having an output and defining a field of view;

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Claim element [8(a)] recites: “providing a portable device including a forward facing portion encompassing a digital camera and an electro-optical sensor, the electro-optical sensor having an output and defining a field of view.” The Petition contends that Numazaki teaches or suggests claim element [8(a)]. Pet., p. 44. It does not.

As discussed above in reference to claim element [1(a)], Numazaki fails to teach a forward facing portion with an electro-optical sensor. See claim element [1(a)], *supra*. Specifically, Numazaki’s photo-detection sensor unit (702) is located on the upward facing portion, not the forward facing portion, of the laptop. Accordingly, Numazaki fails to teach or suggest claim element [8(a)] for the same reasons as claim element [1(a)].

- ii. [8(b)] determining, using a processing unit, a gesture has been performed in the electro-optical sensor field of view based on the electro-optical sensor output, wherein the determined gesture corresponds to an image capture command; and

Claim element [8(b)] recites “determining, using a processing unit, a gesture has been performed in the electro-optical sensor field of view based on the electro-optical sensor output, wherein the determined gesture corresponds to an image capture command. The Petition contends that the combination of Numazaki and Nonaka teaches or suggests this limitation. Pet., p. 44. It does not.

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As discussed above in reference to claim element [1(b)], Numazaki requires two images from different photo-detection units to perform an analysis of a target object and identify a gesture. Numazaki is not capable of determining that a gesture has been performed based on one output from one electrical-optical sensor. *See* claim element [1(b)], *supra*. Moreover, as discussed above in reference to claim element [1(c)], there is no motivation to combine the various disparate embodiments of Numazaki according to the teachings of Nonaka to meet claim element [8(b)] for the same reasons as claim element [1(b)]. *See* claim element [1(c)], *supra*. Accordingly, the combination of Numazaki and Nonaka fails to teach or suggest claim element [8(b)].

- iii. [8(c)] capturing an image to the digital camera in response to the determined gesture corresponding to the image capture command.

Claim element [8(c)] recites “capturing an image to the digital camera in response to the determined gesture corresponding to the image capture command.” The Petition contends that the combination of Numazaki and Nonaka teaches or suggests this limitation. Pet., p. 44. It does not.

As discussed above in reference to claim element [1(c)], there is no motivation to combine the various disparate embodiments of Numazaki according to the teachings of Nonaka to meet claim element [8(c)]. *See* claim element [1(c)], *supra*.

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Accordingly, the combination of Numazaki and Nonaka fails to teach or suggest claim element [8(c)] for the same reasons as claim element [1(c)].

For at least these reasons, the combination of Numazaki and Nonaka fails to render independent claim 8 unpatentable.

9. Dependent Claim 9

Dependent claim 9 recites “The method according to claim 8 wherein the determined gesture includes a hand motion.” Claim 9 depends from and adds limitations to claim 8. The combination of Numazaki and Nonaka fails to render claim 8 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 9 unpatentable for at least the same reasons.

10. Dependent Claim 10

Dependent claim 10 recites “The method according to claim 8 wherein the determined gesture includes a pose.” Claim 10 depends from and adds limitations to claim 8. The combination of Numazaki and Nonaka fails to render claim 8 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 10 unpatentable for at least the same reasons.

11. Dependent Claim 11

Dependent claim 11 recites “The method according to claim 8 wherein the electro-optical sensor includes first and second sensors in fixed relation relative to the digital camera.” Claim 11 depends from and adds limitations to claim 8. The

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combination of Numazaki and Nonaka fails to render claim 8 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 11 unpatentable for at least the same reasons.

Moreover, the Petition relies on the same evidence as claim 4 to argue that claim 18 is unpatentable. *See* Pet., p. 47. But, as described above with respect to claim 4, the portion of Numazaki cited for claim 4 does not contain any description of whether those two components are fixed with respect to each other. *See* Ex. 1004, 39:4-44. Nor do the figures referenced therein. *See* Ex. 1004, Figs. 46-53. For at least these reasons, the combination of Numazaki and Nonaka fails to render claim 18 unpatentable.

12. Dependent Claim 12

Dependent claim 12 recites “The method according to claim 8 wherein the electro-optical sensor defines a resolution less than a resolution defined by the digital camera.” Claim 12 depends from and adds limitations to claim 8. The combination of Numazaki and Nonaka fails to render claim 8 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 12 unpatentable for at least the same reasons.

13. Independent Claim 13

The combination of Numazaki and Nonaka does not render independent claim 13 obvious because it does not teach or suggest at least the following elements of independent claim 13:

- i. [13(a)] a device housing including a forward facing portion, the forwarding facing portion encompassing a digital camera adapted to capture an image and having a field of view and encompassing a sensor adapted to detect a gesture in the digital camera field of view

Claim element [13(a)] recites “a device housing including a forward facing portion, the forwarding facing portion encompassing a digital camera adapted to capture an image and having a field of view and encompassing a sensor adapted to detect a gesture in the digital camera field of view.” The Petition contends that Numazaki teaches or suggests claim element [13(a)]. Pet., p. 47. It does not.

As discussed above in reference to claim element [1(a)], Numazaki fails to teach a forward facing portion with a sensor. Specifically, Numazaki’s photo-detection sensor unit (702) is located on the upward facing portion, not the forward facing portion, of the laptop. See claim element [1(a)], supra. Accordingly, Numazaki fails to teach or suggest claim element [13(a)] for the same reasons as claim element [1(a)].

- ii. [13(b)] a processing unit operatively coupled to the sensor and to the digital camera, wherein the processing unit is adapted to: detect a gesture has been performed in the

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electro-optical sensor field of view based on an output of the electro-optical sensor, and

Claim element [13(b)] recites: “a processing unit operatively coupled to the sensor and to the digital camera, wherein the processing unit is adapted to: detect a gesture has been performed in the electro-optical sensor field of view based on an output of the electro-optical sensor.” The Petition contends that Numazaki teaches or suggests this limitation. Pet., p. 48. It does not.

As discussed above in reference to claim element [1(b)], Numazaki requires two images from different photo-detection units to perform an analysis of a target object and identify a gesture. Numazaki is not capable of determining that a gesture has been performed based on one output from one electrical-optical sensor. See claim element [1(b)], *supra*. Accordingly, Numazaki fails to teach or suggest claim element [13(b)] for the same reasons as claim element 1[(b)].

- iii. [13(c)] correlate the gesture detected by the sensor with an image capture function and subsequently capture an image using the digital camera, wherein the detected gesture is identified by the processing unit apart from a plurality of gestures

Claim element [13(c)] recites “correlate the gesture detected by the sensor with an image capture function and subsequently capture an image using the digital camera, wherein the detected gesture is identified by the processing unit apart from

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a plurality of gestures.” The Petition contends that the combination of Numazaki and Nonaka teaches or suggests this limitation. Pet., p. 48. It does not.

As discussed above in reference to claim element [1(c)], there is no motivation to combine the various disparate embodiments of Numazaki according to the teachings of Nonaka to meet claim element [13(c)]. See claim element [1(c)], *supra*. Accordingly, the combination of Numazaki and Nonaka fails to teach or suggest claim element [13(c)] for the same reasons as claim element [1(c)].

For at least these reasons, the combination of Numazaki and Nonaka fails to render independent claim 13 unpatentable.

14. Dependent Claim 14

Dependent claim 14 recites “The image capture device of claim 13 wherein the detected gesture includes a hand motion.” Claim 14 depends from and adds limitations to claim 13. The combination of Numazaki and Nonaka fails to render claim 13 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 14 unpatentable for at least the same reasons.

15. Dependent Claim 15

Dependent claim 15 recites “The image capture device of claim 13 wherein the detected gesture includes a pose.” Claim 15 depends from and adds limitations to claim 13. The combination of Numazaki and Nonaka fails to render claim 13

unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 15 unpatentable for at least the same reasons.

16. Dependent Claim 16

Dependent claim 16 recites “The image capture device of claim 13 further including a forward facing light source.” Claim 16 depends from and adds limitations to claim 13. The combination of Numazaki and Nonaka fails to render claim 13 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 16 unpatentable for at least the same reasons.

17. Dependent Claim 17

Dependent claim 17 recites “The image capture device of claim 13 wherein the sensor defines a resolution less than a resolution defined by the digital camera.” Claim 17 depends from and adds limitations to claim 13. The combination of Numazaki and Nonaka fails to render claim 13 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 17 unpatentable for at least the same reasons.

18. Dependent Claim 18

Dependent claim 18 recites “The image capture device of claim 13 wherein the sensor is fixed in relation to the digital camera.” Claim 18 depends from and adds limitations to claim 13. The combination of Numazaki and Nonaka fails to

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render claim 13 unpatentable, therefore, the combination of Numazaki and Nonaka fails to render dependent claim 18 unpatentable for at least the same reasons.

Moreover, the Petition relies on the same evidence as claim 4 to argue that claim 18 is unpatentable. *See* Pet., p. 49. But, as described above with respect to claim 4, the portion of Numazaki cited for claim 4 does not contain any description of whether those two components are fixed with respect to each other. *See* Ex. 1004, 39:4-44. Nor do the figures referenced therein. *See* Ex. 1004, Figs. 46-53. For at least these reasons, the combination of Numazaki and Nonaka fails to render claim 18 unpatentable.

E. Ground 2 – The Combination of Numazaki, Nonaka, and Aviv Does Not Render Obvious Claims 6, 11, and 12

Dependent claims 6, 11, and 12 depend from and add limitations to independent claims 1 or 8. For at least the reasons discussed above with respect to Ground 1, the combination of Numazaki and Nonaka does not teach or suggest one or more limitations of independent claims 1 or 8. Aviv does not remedy those deficiencies, and the Petition does not so assert. *See* Pet., pp. 50-55. Therefore, the combination of Numazaki, Nonaka, and Aviv fails to render dependent claims 6, 11, and 12 unpatentable.

IV. THE PETITION SHOULD BE DENIED BECAUSE THE BOARD DOES NOT HAVE JURISDICTION OVER EXPIRED PATENTS

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35 U.S.C. § 2(a)(1) states that United States Patent and Trademark Office “shall be responsible for the granting and issuing of patents. . . .” The Patent Trial Appeal Board is required to “conduct inter partes reviews and post-grant reviews pursuant to chapters 31 and 32.” 35 U.S.C. § 6(b)(4). The burden of proof required to find a claim unpatentable is the preponderance of evidence, which is a lower burden of proof than the clear and convincing standard applied in district courts. 35 U.S.C. § 316(a)(9) requires that the Director prescribe regulations “setting forth standards and procedures for allowing the patent owner to move to amend the patent under subsection(d).” This is due, in part, to the fact that there is a lower burden of proof required before the Board.

The ’949 Patent has expired, so the opportunity to amend the ’949 Patent is not available to Patent Owner. As a result, determinations regarding the validity of this expired patent should be reserved for Article III courts under the clear and convincing standard.

VI. CONCLUSION

The Petition should be denied. Petitioner has not established that the cited references render unpatentable any claim of the ’949 Patent. Alternatively, the Board should exercise its discretion under 35 U.S.C. § 314(a) to deny institution.

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), I hereby certify that the foregoing Patent Owner's Preliminary Response contains 5,979 words as measured by the word processing software used to prepare the document, excluding the cover page, signature block, and portions exempted under 37 C.F.R. § 42.24(a) or (b).

DATED: September 15, 2021

Respectfully submitted,

By: /Todd E. Landis/
Todd E. Landis
Registration No. 44,200
Counsel for Patent Owner

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6, the undersigned certifies that on September 15, 2021, the foregoing document was served on counsel of record for Petitioner by filing this document through the End-to-End System, as well as via electronic mail to counsel of record for Petitioner at the following address: Adam P. Seitz (Adam.Seitz@eriseip.com); Paul R. Hart (Paul.Hart@eriseip.com).

Respectfully submitted,

By: /Todd E. Landis/
Todd E. Landis
Registration No. 44,200
Counsel for Patent Owner